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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,726	07/19/2006	Richard John Nighy	IMV-40014	8207

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EXAMINER	
LONG, DONNELL ALAN	

ART UNIT	PAPER NUMBER
4128	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,726	NIGHY ET AL.	
	Examiner	Art Unit	
	DONNELL LONG	4128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 19 July 2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 62-122 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 62-122 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 7/19/2006.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 85-87, 91-102, 104-107, 110-112, 114-116, and 118-122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirschner et al. (5305923) in view of Busby et al. (7153286).

Regarding claims 85, 86, and 102 the Kirschner et al. reference discloses a beverage dispenser for dispensing a post-mix beverage. The beverage dispenser includes the following:

-A disposable pump (30) including a housing (90), i.e. body, having a plurality of cavities and a surface at which opens a mouth of a cavity formed in said body (see marked up fig. 7g below), an inlet port (96) for connection with a container (14), i.e. reservoir of beverage concentrate, and opening at the surface adjacent to the mouth of the cavity (see marked up fig. 7g and fig. 7a), whereby when the inlet port is open, concentrate can flow from the reservoir to and through the inlet port and into the cavity via the mouth thereof (col. 2, lines 2-9), a concentrate discharge conduit (102), i.e. outlet port, for the concentrate, and a flow passageway extending through the body connecting the cavity to the outlet port (see marked up fig. 7g and fig. 7a).

-A water pump (34) and flow control (172), i.e. diluent supply system, for supplying a regulated flow of diluent.

-A canister (26), i.e. cabinet area, for receiving at least one reservoir of concentrate for fluid coupling to the disposable pump inlet port.

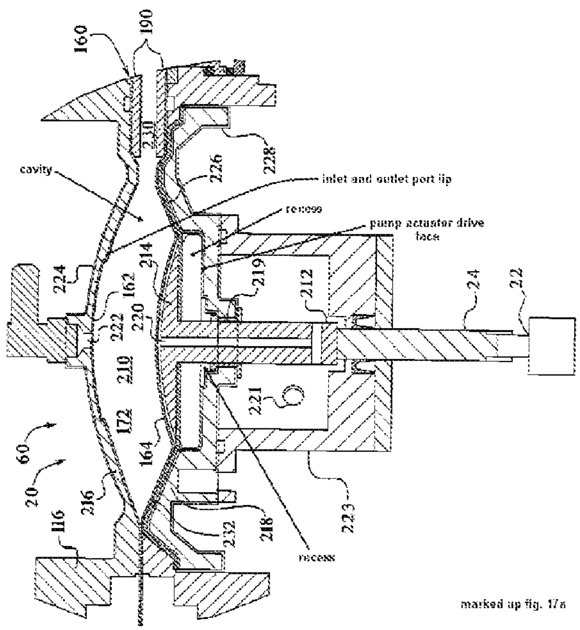
-A pumping station for receiving, retaining and actuating the disposable pump to deliver concentrate from the body outlet port (fig. 1).

-A mixing nozzle (94) for combining the flow of diluent and pumped concentrate. The dispenser (10) constitutes a control system for controlling operation of the pumping station to operate the disposable pump in a manner to meter the flow of pumped concentrate (col. 4, lines 7-14), so that concentrate and diluent are combined in a selected ratiometric mixture of concentrate and diluent (col. 2, lines 25-27).

The Kirschner et al. reference DIFFERS in that the disposable pump does not include a flexible membrane sealingly secured at its periphery to the body surface and overlying the inlet port, cavity and outlet port, with the portions of the flexible membrane which overlie the inlet and outlet ports serving as closures for the ports. Attention, however, is directed to the Busby et al. reference, which discloses a automated dialysis system including a disposable unit containing a flexible membrane (164) sealingly secured at its periphery to a receptacle (172), i.e. body surface, and overlying a fluid port opening (230), which functions as both an inlet port and outlet port (col. 34, lines 8-10), a pump chamber (210), i.e. cavity, the portion of the flexible membrane which overlies the inlet and outlet ports serving as closures for the ports (col. 34, lines 39-41). The Kirschner et al. reference also DIFFERS in that it does not disclose that the

pumping station includes a pump actuator having a drive face to which a side of the flexible membrane opposite from the disposable pump body cavity is coupled, the drive face being in fluid communication with sources of positive and negative pressure for moving said flexible membrane into and out of said cavity to pump concentrate from and draw concentrate into said cavity, the pump actuator having first and second valve actuators to open and close the inlet and outlet ports of the disposable pump, and including clamping means for clamping said disposable pump to said drive face. Attention, however, is directed to the Busby et al. reference, which discloses a lower chamber wall (218) having a surface (see marked up fig. 17a), i.e. drive face, having a recess therein corresponding to and aligning with the body cavity and to which a side of the flexible membrane (164) opposite from the disposable pump body cavity is coupled (see marked up fig. 17a), the drive face being in fluid communication with sources of positive pressure (col. 34, lines 32-37) and negative pressure (col. 34, lines 19-23) for moving the flexible membrane into and out of the cavity to pump fluid from and draw fluid into the cavity. The drive face is releasably attached with a side of the flexible membrane opposite from the cavity against the drive face (figs. 17a-17b). The pump actuator comprises a linear pump actuator (24), piston (212), and piston head (214), i.e. first valve actuator, and a valve actuator (fig. 15, element 26), i.e. second valve actuator, to open and close the inlet and outlet ports of the pump, and a frame (fig. 5, element 186), i.e. clamping means, for clamping the disposable pump to the drive face. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Kirschner et al. reference in view of the teachings of

the Busby et al. reference because flexible membrane pumps are less susceptible to clogging, provide a better seal against contaminants, have better flow characteristics and, therefore, are more suitable for pumping viscous fluids in post-mix beverage dispensers in order to prevent the accumulation of contaminants in the fluid product.



marked up fig. 17a

Regarding claim 87, the diluent supply of the Kirschner et al. reference comprises a water supply fluid coupled to a diluent inlet to the disposable pump body and including diluent cooling means (col. 5, lines 42-47), flow meter means (col. 6, lines 1-10) for detecting the flow of diluent, and a flow control valve to supply the regulated flow of diluent to said diluent inlet.

Regarding claim 91, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include an additional on/off diluent valve in fluid circuit with the flow control valve in order to achieve improved control over the flow of diluent.

Regarding claim 92, the disposable pump body of the Busby et al. reference has a fluid inlet (230) and the diluent supply system of the modified Kirschner et al. reference delivers diluent to the frame (186), i.e. clamping means, of the Busby et al. reference via valve manifold (190) and to the fluid inlet (230), when the clamping means clamps the disposable pump to the drive face.

Regarding claim 93, the modified Kirschner et al. beverage dispenser delivers diluent to the pump body fluid inlet of the Busby et al. reference through tubes (196), i.e. supply lines. The Kirschner et al. reference also discloses a housing (16), i.e. closure, for the diluent supply lines.

Regarding claim 94, the diluent cooling means of the Kirschner et al. reference comprises a refrigerated water bath (176) containing a refrigerant coil (436) for chilling the water bath and a diluent coil (174) in the water bath and through which diluent flows.

Regarding claim 95, the beverage dispenser includes a cooling jacket (37), i.e. means for refrigerating the cabinet area for receiving at least one reservoir of concentrate (col. 4, lines 31-35 of Kirschner et al.).

Regarding claim 96, the beverage dispenser includes a means for monitoring the temperature within the cabinet area (col. 4, lines 31-35 of Kirschner et al.).

Regarding claim 97, the beverage dispenser includes a concentrate container (14), i.e. rigid enclosure, for retaining a reservoir of concentrate, the reservoir of concentrate being received in the cabinet area while within the rigid enclosure (col. 4, lines 7-8 of Kirschner et al.).

Regarding claims 98-100, even though the Kirschner et al. reference does not disclose that the bottom interior surface of the rigid enclosure is angled so that, when the rigid enclosure and reservoir are received in said cabinet area, concentrate in the reservoir will gravitationally flow toward a lower front region of the reservoir, the disposable pump being fluid coupled to the region, it, however would have been obvious to one having ordinary skill in the art to angle the bottom interior surface of the rigid enclosure in order to utilize the force of gravity to assist in forcing a viscous fluid, i.e. juice concentrate, into a dispensing nozzle. Determining a range of angles in order to achieve the optimal gravitational assisted flow of the fluid concentrate is not of innovation, but of ordinary skill and common sense. *KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1742, 82 USPQ2d 1385, 1396 (2007).*

Regarding claim 101, even though the Kirschner et al. reference does not disclose that the beverage dispenser includes a temperature probe and that the rigid enclosure has a hole therein, the temperature probe extending through the hole and protruding from the cabinet area and being in contact with the reservoir within the rigid enclosure in an area of the reservoir in proximity to the disposable pump, so that the temperature probe provides a temperature reading substantially indicative of the temperature of concentrate being pumped, it, however, would have been obvious to one having ordinary skill in the art at the time the invention made to include a temperature probe and position it in such a way as to obtain the best possible measurement of temperature of the fluid. In other words, determining the optimum position of the

temperature probe is not of innovation, but of ordinary skill and common sense. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1742, 82 USPQ2d 1385, 1396 (2007).

Regarding claim 104, the pressure regulator is controlled to provide a pressure regulated in accordance with the type of fluid being pumped (see Busby et al. col. 12, lines 52-55).

Regarding claim 105, the Busby et al. apparatus includes a controller (30), i.e. valve means, associated with the recess on the drive face for switching the regulated pressure on and off (col. 4, lines 12-17 and col. 12, lines 52-55).

Regarding claim 106, the valve means controls both the pressure switching and regulating functions (see Busby et al. col. 4, lines 12-17 and col. 12, lines 52-55).

Regarding claim 107, the Busby et al. apparatus further includes a vacuum pump (46, 44) for providing vacuum and vacuum valve means for selectively coupling the vacuum provided by the vacuum pump to the recess on the drive face (fig. 1).

Regarding claim 110, the fluid communication of the drive face with the source of pressure includes a pump receptacle (see Busby et al. fig. 17a, 172), i.e. pressure reservoir, and the source of vacuum includes a vacuum source (see Busby et al. fig. 1, 44), i.e. vacuum reservoir.

Regarding claim 111, the Busby et al. apparatus includes an air vent solenoid (66), i.e. selectively openable drain, in the bottom of the vacuum reservoir, and a fluid port opening (230), i.e. selectively openable drain, in the bottom of the pressure reservoir.

Regarding claim 112, the disposable pump inlet port of the Busby et al. reference has a lip therearound and the first valve actuator protrudes through the pump actuator drive face and is operable to selectively move the flexible membrane onto the inlet port lip to close the inlet port (see marked up fig. 17a and fig. 17b of the Busby et al. reference).

Regarding claim 114, the disposable pump outlet port has a lip therearound. The piston (212), piston head (214), and actuator (40) also function to close the fluid outlet port, and, therefore, constitute a second valve actuator, which protrudes through the pump actuator drive face and is operable to selectively move said flexible membrane onto the outlet port lip to close the outlet port (see marked up fig. 17a and fig. 17b of the Busby et al. reference).

Regarding claim 115, the Busby et al. apparatus includes a means for driving the second valve actuator in a proportional manner, such that the degree of opening of the outlet port can be controlled to vary the flow of fluid through the outlet port (col. 38, lines 16-19).

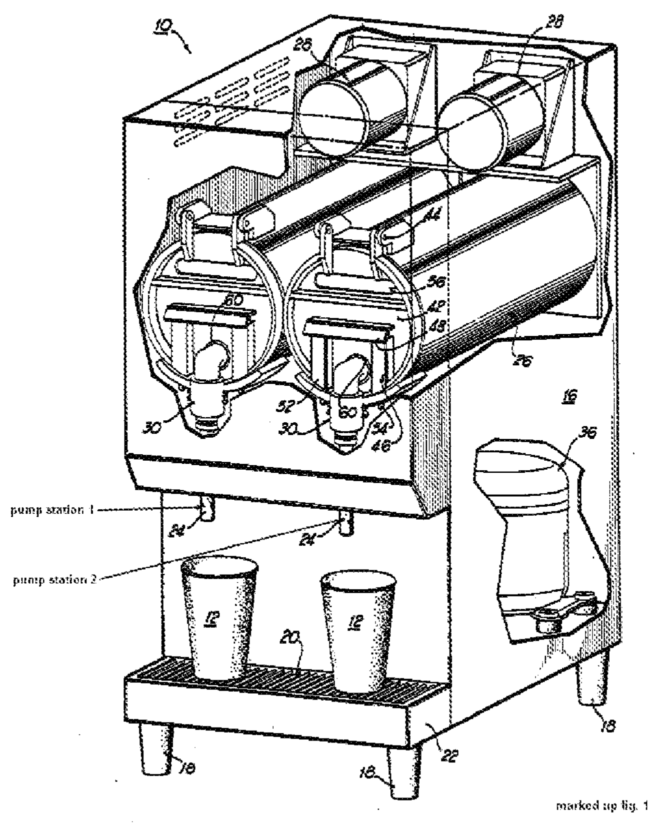
Regarding claim 116, the means for driving the second valve actuator comprises a stepper motor (col. 29, line 50 of Busby et al.).

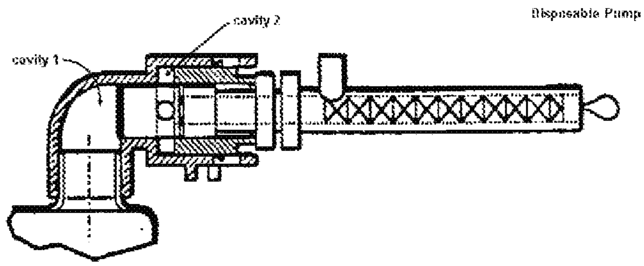
Regarding claim 118, the diaphragm (232) constitutes a rolling diaphragm seal between the valve actuators and the drive face (figs. 17a-17b).

Regarding claim 119, the first and second valve actuators include a diaphragm (232), i.e. relatively soft flexible membrane contacting tip.

Regarding claim 120, the pump actuator includes a diaphragm (232) and sealed aperture (219), i.e. gasket, surrounding the drive face recesses for forming a seal with said disposable pump, so that the application of positive and negative pressures only affect the flexible membrane where it overlies the disposable pump cavities.

Regarding claim 121, the Kirschner et al. beverage dispenser pumping station is adapted to receive a disposable pump having two pump cavities (see marked up figs. 1 and 7g).





marked up fig. 7g

Regarding claim 122, the beverage dispenser includes a plurality of pump stations (see marked up fig. 1).

3. Claim 88 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Robertson et al. (7028561).

Even though the Kirschner et al. reference does not disclose that the flow meter means is a turbine flow meter as claimed, attention, however, is directed to the Robertson et al. reference which discloses a fluid dispensing apparatus including a turbine flow meter (col. 7, lines 61-63). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Kirschner et al. reference by using a turbine flow meter in view of Robertson et al. Doing so would be considered a mere substitution of one equivalent flow meter for another within the dispensing art that would work equally well on the Kirschner et al. device.

4. Claim 89 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Huber et al. (2003/0150872).

Even though the Kirschner et al. reference does not disclose that the flow control valve is a variable orifice valve as claimed, attention, however, is directed to the Huber et al. reference which discloses a fluid dispensing apparatus containing a variable orifice valve (par. 11, lines 13-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Kirschner et al. reference by employing a variable orifice valve, in view of the teaching of Huber et al., in order to vary the flow area of the port to control fluid flow as desired.

5. Claim 90 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Huber et al. (6793098).

Even though the Kirschner et al. reference does not disclose that the flow control valve is an on/off control valve as claimed, attention, however is directed to the Huber et al. reference which discloses a fluid dispensing apparatus containing an on-off control valve (86). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Kirschner et al. reference by employing an on/off control valve, in view of the teaching of Huber et al., in order to control fluid flow.

6. Claim 103 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Martucci (6216914).

The source of positive pressure for the modified Kirschner et al. reference comprises a pressure pump (20 in Busby et al.) and pressure regulator to control pressure being provided to the disposable pump (col. 13, lines 1-4 in Busby et al.). The

Kirschner et al. reference in view of Busby et al. reference also discloses that the system includes other pressure devices. Even though the modified Kirschner et al. reference does not specify that the source of positive pressure includes a pressure release valve as claimed, attention, however is directed to the Martucci reference which discloses a beverage dispensing system including a pressure relief valve (136). It, therefore, would have been obvious to one having ordinary skill in the art at the time the invention was made to include a pressure release valve for the modified Kirschner et al. reference, in view of the teaching of Martucci, to provide a safety device necessary to prevent pressure within a system from exceeding a set amount.

7. Claims 108 and 109 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Treu (5705066).

The modified Kirschner et al. reference discloses that the vacuum provided by the vacuum pump is coupled to the drive face recesses, where the membrane receptacle (172 in Busby et al.) constitutes another recess, through an aperture (220) and vacuum line (50). The Kirschner et al. reference in view of Busby et al. reference DIFFERS in that it does not disclose that the apparatus includes an optical sensor for detecting the presence of fluid, i.e. concentrate, in the line as claimed. Attention, however, is directed to the Treu reference which discloses a fluid dispensing apparatus having an optical fluid sensor (288) used to detect fluid in a hose portion, i.e. line (col. 18, lines 37-44). It, therefore, would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the modified Kirschner et al.

reference by employing an optical fluid sensor, in view of the teaching Treu et al., in order to detect fluid in the vacuum line and prevent damage to the vacuum pump and the membrane.

8. Claim 113 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Wallace et al. (2008/0029541).

Even though the modified Kirschner et al. reference does not disclose that the first valve actuator is driven by solenoid as claimed, attention, however is directed to the Wallace et al. reference which discloses a beverage dispensing device which includes a diaphragm pump (86, 87, 88) having an actuator (88) that is driven by a solenoid (par. 27, lines 19-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the modified Kirschner et al. reference by using a solenoid-driven actuator, in view of the teaching of Wallace et al., in order to automatically control fluid flow.

9. Claim 117 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Kirschner et al. reference (as discussed supra) in view of Kelleher (4450394).

Even though the modified Kirschner et al. reference does not disclose that the stepper motor is overdriven in its closed position and then re-zeroed every time the outlet port is closed as claimed, attention, however, is directed to the Kelleher reference which discloses a stepper motor drive circuit. The Kelleher reference teaches that a stepper motor can be overdriven for short intervals without damage to the motor or circuitry (col. 1, lines 40-49). Therefore, it would have been obvious to one having

ordinary skill in the art at the time the invention was made to have modified the modified Kirschner et al. reference by employing a stepper motor is overdriven in its closed position and then re-zeroed, in view of the teaching of Kelleher, in order to overdrive the stepper motor in order to achieve higher torques.

10. Claims 62-84 are rejected as an obvious use of the modified Kirschner et al. reference. The methods as claimed are obvious during the normal use and operation of the modified Kirschner et al. reference since the apparatus includes all structural limitations as discussed supra. In other words, the method as claimed is not germane to the issue of patentability of a prior art device itself because to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bethuy et al. (6854282) discloses the use and optimum placement of a temperature probe for measuring the temperature of a beverage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONNELL LONG whose telephone number is (571)270-5610. The examiner can normally be reached on Monday through Friday, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Khoa Huynh can be reached on (571)272-4888. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DL
2/02/2009

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